Field Blockers

Now that you've had some experience with magnetic fields, it's time to make some predictions. Examine the list below and circle the materials that you believe will block a magnetic field.

- Aluminum foil
- Wood
- A piece of videocassette tape
- An audio CD
- A plastic plate
- Coins

Now test your predictions by doing the following experiment.

Materials

- A metal paper clip
- Adhesive tape
- A strong magnet
- A stack of books
- A wooden or plastic ruler
- A piece of string 10 inches (25 cm) long
- The materials listed above

To Do

Cut a length of string about 10 inches (25 cm) long. Tie one end of the string to the paper clip. Tape the other end of the string to a desk. Tape a magnet to the end of a ruler. Insert the ruler between the pages of a book so that the magnet extends out as far from the book as possible. Place this book on top of a stack of several books. Position the stack so that the magnet is directly above the paper clip. The clip’s string should be short enough to allow a gap between the clip and the magnet, but long enough for the clip to remain supported by the magnet's attraction. Insert various objects between the magnet and the clip. Record how the magnetic field behaves.

The Science

Some materials (those made of iron) will block a magnetic field. Most materials, however, will not and will allow the magnetic field to penetrate.

Check It Out! Can you magnetize a length of videotape that has been removed from a discarded cassette?